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**ANNOTATED LIST OF THE TYPES OF INVERTEBRATE CRETACEOUS FOSSILS
IN THE COLLECTION OF THE ACADEMY OF NATURAL
SCIENCES, PHILADELPHIA.**

BY CHARLES W. JOHNSON.

The following list of types and figured specimens was made during 1902. Leaving Philadelphia early the following year, I have been unable until the present time to verify some of the notes on synonymy, etc. No attempt has been made to fully work out the synonymy, so that only the published synonyms bearing on the types are given, usually where recent generic changes have been adopted. The generic position of many of the species is doubtful, as they are based on casts often lacking essential characters; the grouping of some of the species in families is therefore only provisional. Although a very thorough study was made of all the cretaceous material, a few types which should be in the collection are missing. I have not recorded these, as they may be found upon further search.

CŒLEENTERATA.

ANTHOZOA.

Trochosmilia atlantica (Morton).

Anthophyllum atlanticum Morton, Am. Jour. Sci., XVII, 288, 1830; *l. c.*, XVIII, pl. 1, figs. 9, 10.

Turbinolia inauris Morton, Syn. Org. Rem., 81, pl. 15, f. 11, 1834.

Flabellum striatum Gabb and Horn, Jour. Acad. Nat. Sci., IV, 399, pl. 68, figs. 10, 11, 1860.

Trochocyathus conoides (Gabb and Horn).

Trochosmilia conoides G. and H., Jour. Acad. Nat. Sci., IV, 2 ser., 399, pl. 69, f. 12.

Trochocyathus woolmani Vaughan, Proc. Acad. Nat. Sci., 1900, p. 436, figs. 1-3.

ANNELIDA.

SERPULIDÆ.

Serpula barbata Morton, Syn. Org. Rem., 73, pl. 15, f. 12, 1834.

Serpula habrogramma Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 398, pl. 68, f. 16, 1860.

Spirorbis? rotula (Morton).

Vermetus rotula Morton, Syn. Org. Rem., 81, pl. 1, f. 14, 1834.

Hamulus onyx Morton, Syn. Org. Rem., 73, pl. 2, f. 8, and pl. 16, f. 5, 1834.

The type of the genus.

Hamulus falcatus (Conrad).

Dentalium falcatum Conrad, Am. Jour. Conch., V, 44, pl. 1, figs. 12, 16, 1869.

The type of Conrad's genus *Falcula*, Am. Jour. Conch., VI, 77, where he refers to it as *Dentalium? hamatus* is truly an error, for in Vol. V he refers to a similar species, *D. hamatum* Forbes, found in India. The genus is based entirely upon internal casts of a *Hamulus*, probably *H. onyx* Mort. Also specimens figured by Whitfield, pl. 20, figs. 16, 17.

Hamulus squamosus Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 398, pl. 68, f. 45, 1860.

Hamulus major Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 399, pl. 68, f. 46, 1860.

Paliurus triangularis Gabb, Proc. Acad. Nat. Sci., 1876, 324, pl. 17, figs. 11-13.

POLYZOA.

Alecto regularis Gabb and Horn, Jour. Acad. Nat. Sci., V, 2 ser., 172, pl. 21, f. 63, 1862.

Biorisina abbotii G. and H., Jour. Acad. Nat. Sci., V, 174, pl. 21, f. 65, 1862.

Bifustra torta G. and H., Jour. Acad. Nat. Sci., V, 152, pl. 20, f. 36, 1862.

Cavea prisca G. and H., Jour. Acad. Nat. Sci., V, 175, pl. 21, f. 67, 1862.

Cellepora bilabiata G. and H., Proc. Acad. Nat. Sci., 1860, p. 366; Jour. Acad. Nat. Sci., IV, 400, pl. 69, figs. 21-23, 1860 (not Busk, 1854) = *C. prolifica* G. and H., Jour. Acad. Nat. Sci., V, 124, 1862.

Cellepora carinata G. and H., Proc. Acad. Nat. Sci., 1860, p. 366; Jour. Acad. Nat. Sci., IV, 400, pl. 69, figs. 24-26, 1860.

On specimen with type of *Pyripora irregularis* G. and H.

Cellepora exserta G. and H., Jour. Acad. Nat. Sci., V, 125, pl. 19, f. 6, 1862.

Cellepora pumila G. and H., Jour. Acad. Nat. Sci., V, 126, pl. 19, f. 8, 1862.

Cellepora typica G. and H., Proc. Acad. Nat. Sci., 1860, p. 366; Jour. Acad. Nat. Sci., IV, p. 400, pl. 69, figs. 27-29, 1860 = *Escharifora typica* G. and H.

Crescis labiata G. and H., Jour. Acad. Nat. Sci., V, 177, pl. 21, f. 69, 1862.

Diastopora lineata G. and H., Jour. Acad. Nat. Sci., V, 172, pl. 21, f. 62, 1862.

Escharifora typica G. and H., Jour. Acad. Nat. Sci., V, pp. 134, 155, pl. 19, f. 16, 1862.

The type is encrusting a specimen of *Terebratula harlani*.

Escharinella muralis G. and H., Jour. Acad. Nat. Sci., V, 140, pl. 19, f. 23, 1862.

Escharipora abbottii G. and H., Jour. Acad. Nat. Sci., V, 149, pl. 20, f. 33, 1862.

Escharipora immersa G. and H., Jour. Acad. Nat. Sci., V, 149, 1862.

Eudea dichotoma Gabb, Proc. Acad. Nat. Sci., 1861, p. 330.

Fascipora americana G. and H., Jour. Acad. Nat. Sci., V, 165, pl. 21, f. 54, 1862.

Hippothoa irregularis G. and H., Proc. Acad. Nat. Sci., 1860, p. 366 = *Pyripora irregularis* G. and H.

Membranipora abortiva G. and H., Jour. Acad. Nat. Sci., V, 157, pl. 20, f. 41, 1862.

Membranipora perampla G. and H., Jour. Acad. Nat. Sci., V, 158, pl. 20, f. 42, 1862.

Multioresis parvicella G. and H., Jour. Acad. Nat. Sci., V, 178, pl. 21, f. 70, 1862.

Plioploea sagena G. and H., Jour. Acad. Nat. Sci., V, 150, pl. 20, f. 34, 1862.

Pyripora irregularis G. and H., Jour. Acad. Nat. Sci., V, 157, pl. 20, f. 40, 1862.

Reptescharellina prolifera G. and H., Jour. Acad. Nat. Sci., V, 146, pl. 20, f. 28, 1862.

Reptocelleporaria aspera G. and H., Jour. Acad. Nat. Sci., V, 131, pl. 19, f. 14, 1862.

Reptofustrella heteropora G. and H., Jour. Acad. Nat. Sci., V, 162, pl. 20, f. 50, 1862.

Reptomulticara cepularis G. and H., Proc. Acad. Nat. Sci., 1860, p. 367; Jour. Acad. Nat. Sci., IV, 401, pl. 68, figs. 33-35, 1860.

Retelea ovalis G. and H., Jour. Acad. Nat. Sci., V, 164, pl. 21, f. 52, 1860.

Reticulipora dichotoma G. and H., Jour. Acad. Nat. Sci., V, 173, pl. 21, f. 64, 1860.

Reticulipora sagena G. and H., Proc. Acad. Nat. Sci., 1860, p. 366; Jour. Acad. Nat. Sci., IV, 400, pl. 69, figs. 30-32, 1860.

Desmatocium trilobatum Gabb.

The type of the genus and species is only a peculiar shaped sand concretion.

BRACHIOPODA.

Terebratula harlani Morton, Amer. Jour. Sci., XVII, 283, 1829; XVIII, pl. 3, f. 16, 1830.

Terebratula fragilis Morton, Amer. Jour. Sci., XVII, 283, 1829, XVIII, pl. 3, f. 17.

Terebratula perovalis Morton (not Sowerby) = *camella* Morton, Syn. Org. Rem., 70, var. "B," pl. IX, f. 8, 1834.

Terebratulina atlantica (Morton).

Terebratula atlantica Morton, Jour. Acad. Nat. Sci., VIII, 214, 1842.

Terebratulina halliana Gabb, Proc. Acad. Nat. Sci., V., 19, 1861.

The type of Gabb's species, but not of Morton's.

Terebratulina floridana (Morton).

Terebratula floridana Morton, Syn. Org. Rem., 72, pl. 16, f. 7, 1834.

Terebratella plicata (Say).

Terebratula plicata Say, Amer. Jour. Sci., II, 43, 1820; Jour. Acad. Nat. Sci., VI, 73, pl. 3, figs. 5, 6.

Terebratula sayi Morton, Syn. Org. Rem., 71, pl. 3, figs. 3, 4, 1834.

The specimen figured by Morton, but not Say's type.

ECHINODERMATA.

Pentacrinus bryani Gabb, Proc. Acad. Nat. Sci., 1876, 178, pl. 5, figs. 1, 1a, 1b.

Goniaster mammillata Gabb, Proc. Acad. Nat. Sci., 1876, 178, pl. 5, figs. 2, 2a, 2b.

Cidaris splendens (Morton).

Cidarites splendens Morton, Proc. Acad. Nat. Sci., 1841, 132.

Cidarites armiger Morton, Jour. Acad. Nat. Sci., VIII, 215, pl. II, f. 1.

Cidaris walcotti Clark, Johns Hopkins Univ. Cir., No. 87, p. 75, 1891; U. S. Geol. Sur. Bull., 97, p. 37, pl. VI, figs. 4a-d, 1893.

Salenia tumidula Clark, Johns Hopk. Univ. Cir., No. 87, p. 75, 1891; U. S. Geol. Sur. Bull., 97, p. 41, pl. XI, figs. 1a-j, 1893.

Salenia bellula Clark, Johns Hopk. Univ. Cir., No. 87, p. 75, 1891; U. S. Geol. Sur. Bull., 97, p. 43, pl. XI, figs. 2a-g, 1893.

Pseudodiadema diatretum (Morton).

Cidaris diatretum Mort., Amer. Jour. Sci., XXIII, 294, 1833.

Cidarites diatretum Mort., Syn. Org. Rem., 75, pl. 10, f. 10, 1834.

Pseudodiadema diatretum Clark, U. S. Geol. Sur. Bulletin, 97, pl. 13, f. 1.

Coptosoma speciosum Clark, Johns Hopk. Univ. Cir., No. 87, p. 76, 1891; U. S. Geol. Sur. Bull., 97, p. 52, pl. 18, figs. 1a-h.

Psammechinus cingulatus Clark, Johns Hopk. Univ. Cir., No. 87, p. 76; U. S. Geol. Sur. Bull., 97, p. 55, pl. 20, figs. 1a-i.

Echinobrissus expansus Clark, Johns Hopk. Univ. Cir., 87, p. 76; U. S. Geol. Sur. Bull., 97, p. 61, pl. 26, figs. 1a-g.

Trematopygus crucifer (Morton).

Ananchytes cruciferus Mort., Am. Jour. Sci., XVIII, 245, pl. 3, f. 8, 1830.
Trematopygus crucifer Clark, U. S. Geol. Sur. Bull., 97, p. 63, pl. 27, figs. 1a-i.

Catopygus oviformis Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 39, pl. 1, f. 9.**Cassidulus florealis** (Morton).

Clypeaster florealis Mort., Am. Jour. Sci., XXIII, 294, 1833; Synop. Org. Rem., 76, pl. 3, f. 12, and pl. 10, f. 12.
Cassidulus florealis Clark, U. S. Geol. Sur. Bull., 97, p. 66, pl. 28, figs. 1a-b.

Type from the Delaware and Chesapeake Canal. The specimens figured by Clark are probably from Alabama, and not from New Jersey. They agree with specimens in the "Gabb collection" from Uniontown, Alabama.

Cassidulus æquoreus Morton, Syn. Org. Rem., 76, pl. 3, f. 14, 1834.**Cassidulus micrococcus** Gabb, Proc. Acad. Nat. Sci., 1860, p. 519; Clark, U. S. Geol. Sur. Bull., 97, p. 69, pl. XXX, figs. 1a-i.**Cassidulus subquadratus** Conrad, Jour. Acad. Nat. Sci., 2 ser., IV, 291, pl. 47, f. 19, 1860.**Cardiaster cinctus** (Morton).

Ananchytes cinctus Mort., Jour. Acad. Nat. Sci., VI, 200, 1830; Am. Jour. Sci., XVIII, 246, pl. 3, f. 7, 1830.

Cardiaster fimbriatus (Morton) = *C. cinctus*, Mort.

Ananchytes fimbriatus Mort., Jour. Acad. Nat. Sci., VI, 200, 1830; Am. Jour. Sci., XVIII, 245, pl. 3, f. 9, 1830.

Hemiaster parastatus (Morton).

Spatangus cor-marinum (?) Morton, Am. Jour. Sci., XVIII, 250, pl. 3, f. 10, 1830.

Spatangus parastatus Mort., Am. Jour. Sci., XXIII, 294, 1833; Syn. Org. Rem., 77, pl. 3, f. 21, 1834.

Hemiaster stella (Morton).

Spatangus stella Morton, Am. Jour. Sci., XVIII, 245, pl. 3, f. 11, 1830.

Hemiaster ungula (Morton).

Spatangus ungula Morton, Am. Jour. Sci., XXIII, 131, pl. 10, f. 6, 1833.

Pygurus (?) **geometricus** (Morton).

Clypeaster geometricus Morton, Am. Jour. Sci., XXIII, 131, pl. 10, f. 9, 1833.
Pygurus (?) *geometricus* Clark, U. S. Geol. Sur. Bull., 97, p. 92.

Discoidea occidentale Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 398, pl. 68, figs. 42-44, 1860.**MOLLUSCA.****PELECYPODA.****NUCULIDÆ.****Nucula eufalensis** Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 397, pl. 68, f. 35.**Nucula percrassa** Conrad, Jour. Acad. Nat. Sci., III, 2 ser., 327, pl. 35, f. 4.

Also specimen figured by Whitfield (*Mon. U. S. Geol. Sur.*, IX, 102, pl. XI, figs. 4-6).

Nucula slackiana (Gabb).

Leda slackiana Gabb., Jour. Acad. Nat. Sci., IV, 2 ser., 397, pl. 68, f. 37.

Also specimen figured by Whitfield (*Mon. U. S. Geol. Sur.*, IX, 103, pl. XI, f. 3).

LEDIDÆ.

Leda pinnaforme Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 303, pl. 43, f. 23.

Also specimen figured by Whitfield (*Mon.*, IX).

Leda protexta Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 303, pl. 48, f. 23 (not 24).

Perrisonota protexta Conr., Amer. Jour. Conch., V, 98, pl. 9, f. 24.

Represented by three specimens; the smaller one, and not the specimen figured by Whitfield (pl. XI, figs. 14, 15), is probably the type, or one figured by Conrad.

Yoldia longifrons Conrad.

Leda longifrons Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 281, pl. 46, f. 18.

Nucularia papyria Conrad, Amer. Jour. Conch., V, 44, pl. 1, f. 7, and p. 98, pl. 9, f. 25.

ARCIDÆ.

Cucullæa vulgaris Morton, Amer. Jour. Sci., XVII, 1 ser., 285, and XVIII, pl. 3, f. 21, 1830; Syn. Org. Rem., 64, pl. 3, f. 8; pl. 13, f. 5, 1834.

Represented by 16 specimens accompanied by Morton's original label (No. 393), but the specimen is not numbered and the figure is too poor to positively identify.

Cucullæa antrosa Morton, Syn. Org. Rem., 65, pl. 13, f. 6, 1834.

A specimen marked "type" in Gabb's handwriting.

Cucullæa tippiana Conrad, Jour. Acad. Nat. Sci., III, 2 ser., 328, pl. 35, f. 1, 1858.

Cucullæa capax Conrad, Jour. Acad. Nat. Sci., III, 2 ser., 328, pl. 35, f. 2, 1858.

Both *C. tippiana* and *C. capax* will probably prove to be synonyms of *C. vulgaris* Morton.

Cucullæa maconensis Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 281, pl. 47, f. 20, 1860.

Type of the genus *Trigonarca* Conr. (*Am. Jour. Conch.*, III, 9, 1867).

Cucullæa neglecta Gabb, Proc. Acad. Nat. Sci., 1861, p. 326.

The species is based on a number of specimens; the actual type cannot be defined. Whitfield considers it the same as *C. antrosa* Morton. If so it is the young.

Cucullæa transversa Gabb, Proc. Acad. Nat. Sci., 1861, p. 326.

The specimen figured by Whitfield as *Trigonarca transversa* (pl. XII, figs. 14, 15) is not the type. I found the true type in a drawer containing material marked "Gabb collection." This is not the *C. transversa* Rogers, 1839, and being preoccupied, I propose the name of *C. gabbi* for this species.

Cucullæa alabamensis Gabb.

Idonearca alabamensis Gabb, Proc. Acad. Nat. Sci., 1876, p. 315.

The type, a characteristic specimen of Prairie Bluff, Alabama, is so altered by the work of the boring sponge (*Clione*) that all shell characters are obliterated. It is probably a synonym of *C. vulgaris* or *tippiana*.

Cucullæa littlei Gabb.

Idonearca littlei Gabb, Proc. Acad. Nat. Sci., 1876, p. 316.

Trigonarca cuneata Gabb, Proc. Acad. Nat. Sci., 1876, p. 316.

Trigonarca cuneiformis Conrad, Amer. Jour. Conch., V, 98, pl. IX, f. 1, 1867.

Cibota obesa Whitfield, Mon. U. S. Geol., IX, 93, pl. XI, figs. 30, 31, 1885.

Cibota multiradiata Gabb, Proc. Acad. Nat. Sci., 1860, p. 95, pl. II, f. 1.

Nemoarca cretacea Conrad, Amer. Jour. Conch., III, 97, pl. IX, f. 21, 1869.

Arca rostellata Morton, Syn. Org. Rem., 64, pl. III, f. 11, 1834.

Arca uniopsis Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 275, pl. 24, f. 17, 1853.

Arca altirostris Gabb, Proc. Acad. Nat. Sci., 1861, p. 325.

Arca quindecemradiata Gabb, Proc. Acad. Nat. Sci., 1860, p. 95, pl. 2, f. 1.

Arca saffordii Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 397, pl. 68, f. 37, 1860.

Represented only by the New Jersey specimens referred to this species.

Arca lintea (Conrad).

Barbatia (Polynema) lintea Conr., Kerr's Geol. Sur. N. Car., II, pp. 4, pl. I, f. 12, 1875.

Arca carolinensis Conrad.

Barbatia (Plagiarca) carolinensis Conr., Kerr's Geol. Surv. N. Car., I, App., p. 4, pl. I, f. 11, 1875.

Nemodon eufalensis (Gabb).

Arca (Macrodon) eufalensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 398, pl. 68, f. 39, 1860.

Whitfield's so-called type (pl. 12, fig. 5) may represent another species or the same as Conrad's, but the exterior is so eroded that specific characters are obliterated.

Nemodon eufalensis Conrad, 1869 (not of Gabb).

Conrad's type of the genus *Nemodon* (*Am. Jour. Conch.*, III, 9, and V, 97, pl. IX, f. 16). This is a very different species from *Nemodon eufalensis* Gabb. I therefore propose the name of *N. conradi* for this species.

Nemodon angulatum Gabb.

Leda angulata Gabb, Proc. Acad. Nat. Sci., 1860, p. 94, pl. II, f. 12.

Nemodon brevifrons Conr., Kerr's Geol. Sur. N. C., App., p. 4, pl. I, f. 15, 1875. Type?

The specimen figured by Whitfield (pl. XII, figs. 1, 2) as probably from Haddonfield, New Jersey, is more likely to be from Snow Hill, North Carolina. The micaceous "marl" from Haddonfield is harder,

more dense and cuts smooth, while that from Snow Hill is more sandy and crumbles easily.

Pectunculus hamula Morton, Syn. Org. Rem., 64, pl. 15, f. 7, 1834.

Pectunculus australis Morton, Syn. Org. Rem., 64, 1834 = *P. subaustralis* d'Orb., Prod. de Pal., p. 243.

Pectunculus rotundatus Gabb.

Arxinea rotundata Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 396, pl. 68, f. 33, 1860.

PINNIDÆ.

Pinna rostriformis Morton, Proc. Acad. Nat. Sci., I, 132, 1841; Jour. Acad. Nat. Sci., VIII, 1 ser., 214, pl. 10, f. 5, 1842.

Pinna laqueata Conrad.

Specimen figured by Whitfield (pl. 16, f. 1).

MELINIDÆ.

Gervilliopsis ensiformis (Conrad).

Specimen figured by Whitfield (pl. 15, f. 11).

Inoceramus barabini Morton, Syn. Org. Rem., 62, pl. III, f. 11, pl. XVII, f. 3, 1834.

Inoceramus alveatus Morton, Syn. Org. Rem., 63, pl. XVII, f. 4, 1834.

Inoceramus perovalis Conrad, Proc. Acad. Nat. Sci., VI, 200, 1852; Jour. Acad. Nat. Sci., II, 2 ser., 299, pl. 27, f. 7, 1854.

Inoceramus sagensis Owen, var. **quadrans** Whitf., Mon. U. S. Geol. Sur., IX, 79, pl. 14, f. 16, 1885.

HAPLOSCAPHIDÆ Conrad.

Haploscapha capax Conrad, Ann. Rep. U. S. Geol. and Geogr. Sur. Ter. (Hayden), 456, 1873 (1874).

Haploscapha grandis Conrad, U. S. Geol. Sur. Ter. (Hayden), II, 23, pl. 56, 1875.

Haploscapha (Cucullifera) eccentrica Conrad, U. S. Geol. Sur. Ter. (Hayden), II, 24, pl. 57, 1875.

PTERIIDÆ.

Pteria laripes (Morton).

Avicula laripes Mort., Syn. Org. Rem., 63, pl. XVII, f. 5, 1834.

Pteria navicula Whitfield, Mon. U. S. Geol. Sur., IX, 70, pl. XIV, f. 8, 1895.

Meleagrinella abrupta (Conrad).

Avicula abrupta Conr., Jour. Acad. Nat. Sci., II, 2 ser., 274, pl. 24, figs. 5, 6, 1853.

OSTREIDÆ.

Ostrea cretacea Morton, Syn. Org. Rem., 52, pl. XIX, p. 3, 1834.

Ostrea plumosa Morton, Syn. Org. Rem., 51, pl. III, f. 9, 1834.

Specimen figured by Whitfield (pl. III, f. 13), also the specimen figured on pl. IV, f. 9, as *Anomia argentaria*.

Ostrea denticulifera Conrad, Jour. Acad. Nat. Sci., III, 2 ser., 30, pl. 35, figs. 1, 8, 1858.

Ostrea littlei Gabb, Proc. Acad. Nat. Sci., 1876, 321.

Ostrea tecticoosta Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 403, pl. 63, figs. 47, 48, 1860.

The New Jersey type is figured by Whitfield (pl. III, figs. 1, 2).

Ostrea falcata Morton, Jour. Acad. Nat. Sci., VI, 1 ser., 50, pl. I, f. 2, 1827.

Ostrea torosa Morton, Syn. Org. Rem., 52, pl. X, f. 1, 1834.

This is an eroded fragment of a large *Exogyra costata* Say.

Ostrea (Gryphæostrea) vomer (Morton).

Gryphæa vomer Morton, Syn. Org. Rem., 54, pl. IX, f. 5, 1834.

Gryphæa pitcheri Morton, Syn. Org. Rem., 55, pl. 15, f. 9, 1834.

This is now considered a synonym of *G. corrugata* Say.

Gryphæa mutabilis Morton, Jour. Acad. Nat. Sci., VI, 81, pl. IV, f. 3, 1828.

Dr. Dall is wrong in considering this a synonym of *Ostrea compressirostra*. The specimen he refers to might be that species, but the type is not; it is a broad, flattened form of *G. convexa* Say, which is considered by most authors to be the same as Lamarek's *G. vesicularis*.

Gryphæa convexa (Say).

The specimen figured by Morton (*Jour. Acad. Nat. Sci.*, VI, 79, pl. 4, figs. 1, 2, 1828).

Gryphæa bryanii Gabb, Proc. Acad. Nat. Sci., 1876, 321.

The specimens figured by Whitfield (pl. 27, figs. 6-9) are not the types, but probably a suite of co-types presented to the Academy by Gabb. Specimens marked "type" in Gabb's handwriting I found in the drawer marked "Gabb collection" above referred to.

TRIGONIDÆ.

Trigonia thoracica Morton, Syn. Org. Rem., 65, pl. 15, f. 13, 1834.

Trigonia eufalensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 396, pl. 68, f. 32, 1860.

Also the specimen figured by Whitfield (pl. 14, figs. 1, 2). This is only the young of *T. thoracica*.

Trigonia angulicostata Gabb, Proc. Acad. Nat. Sci., 1876, p. 312.

PECTINIDÆ.

Pecten craticula Morton, Amer. Jour. Sci., 1 ser., XXIII, 293, 1833; Syn. Org. Rem., 57.

Figured by Whitfield (*Mon. U. S. Geol. Sur.*, IX, 49, pl. VII, figs. 17, 18).

Pecten venustus Morton, Amer. Jour. Sci., 1 ser., XXIII, 293, pl. 5, f. 7, 1833.

Pecten quinquenaria Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 275, pl. 24, f. 10, 1854.

Pecten mississippiensis Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 283, 1860.

Pecten tenuitesta Gabb, Proc. Acad. Nat. Sci., 1861, 327; Whitfield, *Mon. U. S. Geol. Sur.*, IX, 47, pl. VII, figs. 5, 6.

Pecten burlingtonensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 304, pl. 48, f. 26, 1860.

Pecten bellisculptus (Conrad).

Camptonectes bellisculptus Conr., Amer. Jour. Conch., V, 99, pl. 9, f. 11, 1869.

Dr. Whitfield is right in uniting this with *P. burlingtonensis*; further study may prove that both are synonyms of *P. argillensis* Conr.

Peecten perlamellosus Whitfield, Mon. U. S. Geol. Sur., IX, 50, pl. VII, f. 7, 1885.

Peecten conradi Whitfield, Mon. U. S. Geol. Sur., IX, 52, pl. VII, fgs. 8-10, 1885.

This is the *P. simplicus* Conrad in part.

Neithea complexicosta Gabb, Proc. Acad. Nat. Sci., 1876, 319.

Probably only a form of *N. quinquecostata* Sowb.

SPONDYLIDÆ.

Spondylus gregale (Morton).

Plagiostoma gregale Mort., Syn. Org. Rem., 60, pl. V, f. 6, 1834.

Dianchora echinata (Morton).

Plagiostoma echinatum Mort., Syn. Org. Rem., Add. Obs., IV, 1835.

Spondylus capax Conr., Jour. Acad. Nat. Sci., II, 2 ser., 274, pl. 24, f. 8.

Dianchora echinata Whitf., Mon. U. S. Geol. Sur., IX, 59, pl. X, fgs. 3-5.

Morton's and Conrad's species are based on the same shell, a very convex free valve.

Plicatula urticosa Morton, Syn. Org. Rem., 62, pl. X, f. 2, 1834.

Plicatula tetrica Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 283, pl. 46, f. 26, 1860.

LIMIDÆ.

Lima pelagica (Morton).

Plagiostoma pelagicum Mort., Syn. Org. Rem., 61, pl. V, f. 2, 1834.

Lima squarrosa (Gabb).

Ctenoides squarrosa Gabb, Proc. Acad. Nat. Sci., 1861, 366.

Lima acutilineata (Conrad).

Specimens figured by Whitfield (*Mon. U. S. Geol. Sur.*, IX, 62, pl. 9, fgs. 6, 7).

ANOMIIDÆ.

Anomia argentaria Morton, Amer. Jour. Sci., XXIII, 293, pl. 5, f. 10, 1833.

Anomia argentaria Morton, var. *ornata* Gabb.

Anomia tellinoides Morton, Amer. Jour. Sci., XXIII, 294, p. 5, f. 11, 1833.

Paranomia scabra (Morton).

Placuna scabra Mort., Syn. Org. Rem., 62, 1834.

Figured by Whitfield (*Mon. U. S. Geol. Sur.*, IX, 44, pl. X, fig. 10).

Paranomia lineata (Conrad).

Placunanomia lineata Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 291, pl. 46, f. 20.

Paranomia saffordi Conrad, Am. Jour. Conch., III, 8.

Liroscapha squamosa Conrad, Am. Jour. Conch., V, 100, pl. 9, f. 23, 1869.

MYTILIDÆ.

Modiolus julia Lea, Proc. Acad. Nat. Sci., 1861, 149.

Specimen figured by Whitfield (pl. 17, f. 6). Probably the type.

Modiolus burlingtonensis Whitfield, Mon. U. S. Geol. Sur., IX, 65, pl. 17, fgs. 8, 9, 1885.

Modiolus ovatus Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 306, pl. 68, f. 31, 1860.

Lithophaga affinis Gabb, Proc. Acad. Nat. Sci., 1861, 326.

Type figured by Whitfield (*Mon.*, pl. 17, figs. 2, 3).

Lithophaga riplejana Gabb, Proc. Acad. Nat. Sci., 1876, 311.

The types are not very clearly defined; they include the specimen figured by Whitfield (pl. 17, figs. 4, 5).

PHOLADOMYIDÆ.

Pholadomya occidentalis Morton, Syn. Org. Rem., 68, pl. VIII, f. 3, 1834.

Pholadomya littlei Gabb, Proc. Acad. Nat. Sci., 1876, 306.

Pholadomya postsulcata Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 276, 1860.

Pholadomya (Anatimya) anteradiata Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 276, pl. 46, f. 3, 1860.

ANATINIDÆ.

Periplomya elliptica (Gabb).

Anatina elliptica Gabb, Proc. Acad. Nat. Sci., 1861, 324.

Cercomya peculiaris (Conrad).

Inoceramus peculiaris Conr., Am. Jour. Conch., V, 43, pl. I, f. 13.

PERIPLOMIDÆ.

Periploma applicata Conrad, Jour. Acad. Nat. Sci., III, 2 ser., 324, 1858.

POROMYIDÆ.

Leiopistha protexta (Conrad).

Cardium protextum Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 275, pl. 24, f. 12.

PLEUROPHORIDÆ.

Veniella conradi (Morton).

Venilia conradi Mort., Amer. Jour. Sci., XXIII, 294, pl. 8, figs. 1, 2, 1833.

The specimen marked "type" is badly broken.

Veniella elevata Conrad, Amer. Jour. Conch., VI, 74, pl. 1 [= 3], figs. 7, 7a, 1870.

This is only the young of *V. conradi*.

Veniella inflata Conrad.

Goniosoma inflata Conr., Amer. Jour. Conch., V, 44, pl. 1, f. 10.

An internal cast, the type of Conrad's genus *Goniosoma*. This is undoubtedly the same as *V. conradi*, as Dr. Whitfield suggests.

Veniella trigona Gabb, Proc. Acad. Nat. Sci., 1861, p. 324.

The types are figured by Whitfield (pl. 19, figs. 11-14).

Veniella subovalis "Conrad."

As figured and described by Whitfield (*Mon. U. S. Geol. Sur.* IX, 150, pl. 19, figs. 1, 2, 1885).

Veniella trapezoides Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 282, pl. 47, f. 7, 1860.

Veniella rhomboidea Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 275, pl. 24, f. 7, 1853.

Sphæriola umbonata Whitfield, Mon. U. S. Geol. Sur., IX, 152, pl. 19, figs. 17, 18, 1885.

Eta carolinensis Conrad, Kerr's Rept. Geol. N. Car., App., 6, pl. 1, f. 4, 1875.

A specimen agreeing in all respects with the figure, but I am not sure that it is the type. The species is the type of the genus.

CRASSATELLITIDÆ.

Crassatellites vadosus (Morton).

Crassatella vadosa Mort., Syn. Org. Rem., 66, pl. 13, f. 12, 1834.

Crassatellites ripleyanus (Conrad) = *C. vadosus* Mort.

Crassatella riplejana Conr., Jour. Acad. Nat. Sci., III, 2 ser., 327, pl. 35, f. 3, 1858.

Crassatellites linteus (Conrad) = *C. vadosus*, Mort. juv.

Crassatella lintea Conr., Jour. Acad. Nat. Sci., IV, 279, pl. 46, f. 5, 1860.

Crassatellites prorus (Conrad).

Crassatella prora Conr., Amer. Jour. Conch., V, 43, pl. I, f. 8, 1869.

Crassatellites monmouthensis (Gabb).

Crassatella monmouthensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 302, pl. 48, f. 19, 1860.

Crassatellites delawarensis (Gabb).

Crassatella delawarensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 303, pl. 48, f. 20, 1860.

The type is from "Crosswicks, N. J.," in Gabb's handwriting, not "deep cut Delaware and Chesapeake Canal" as stated in text.

Crassatellites transversus (Gabb).

Crassatella transversa Gabb, Proc. Acad. Nat. Sci., 1861, p. 364.

Crassatellites subplanus (Conrad).

Crassatella subplana Conr., Jour. Acad. Nat. Sci., II, 2 ser., 274, pl. 24, f. 9, 1853.

Crassatellites (Scambula) perplanus (Conrad).

Scambula perplana Conr., Amer. Jour. Conch., V, 48, pl. 9, figs. 7, 8.

Eriphyla decemnaria (Conrad).

Gouldia decemnaria Conr., Amer. Jour. Conch., V, 48, pl. 9, f. 4.

Eriphyla conradi (Whitfield).

Gouldia conradi Whitf., Mon. U. S. Geol. Sur., IX, 125, pl. 18, figs. 1-3, 1885.

The type is badly broken.

Eriphyla parilis (Conrad).

Astarte parilis Conr., Jour. Acad. Nat. Sci., II, 2 ser., 276, pl. 24, f. 16, 1853.

The type is very badly broken, in fact worthless.

DICERATIDÆ.

Requienia senseni Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 299, pl. 27, f. 8, 1854.

LUCINIDÆ.

Lucina cretacea (Conrad), Whitfield.

Lucina cretacea Whitfield, Mon. U. S. Geol. Surv., IX, 129, pl. 18, figs. 23-25, 1885.

Lucina smockana Whitf., Mon. U. S. Geol. Surv., IX, 130, pl. 18, figs. 21, 22, 1885.

DIPLODONTIDÆ

Tenea pinguis (Conrad).

Lucina pinguis Conr., Jour. Acad. Nat. Sci., II, 2 ser., 275, pl. 24, f. 18, 1853.

Mysia gibbosa Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 302, pl. 48, f. 17 (not 18), 1860.

Both the types of Conrad and Gabb.

Tenea parilis (Conrad).

Mysia parilis Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 278, pl. 46, f. 8, 1860.

Type as figured in the *Am. Jour. Conch.*, pl. 3, f. 12, and type of the genus *Tenea*.

CARDIIDÆ.

Cardium dumosum Conrad, Amer. Jour. Conch., VI, 75, 1870.

The type and specimen figured by Whitfield (pl. 20, figs. 9 and 13).

Cardium ripleyanum Conrad, Am. Jour. Conch., V, 96, pl. 9, f. 6, 1869.

Cardium (Lævicardium) spillmani Conrad.

Cardium spillmani Conr., Jour. Acad. Nat. Sci., III, 2 ser., 326, pl. 34, f. 3, 1858.

Type of the genus *Pachycardium* Conrad (*Am. Jour. Conch.*, V, 96, 1807).

Cardium (Lævicardium) perelongatum (Whitfield).

Protocardium perelongatum Whitf., Mon. U. S. Geol. Surv., IX, 136, pl. XXI, figs. 4, 5, 1885.

There is little doubt but that this is only the internal cast of *C. spillmani*.

Cardium (Lævicardium) burlingtonense (Whitfield).

Pachycardium Burlingtonense Whitfield, Mon. U. S. Geol. Surv., IX, 138, pl. XXI, figs. 6, 7, 1885.

This may also prove to be only a form of *C. spillmani*.

Protocardia arkansense (Conrad).

Cardium arkansense Conr., Proc. Acad. Nat. Sci., 1855, 266.

ISOCARDIIDÆ.

Isocardia conradi Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 393, pl. 68, f. 21, 1860.

VENERIDÆ.

Cyprimeria excavata (Morton).

Cytherea excavata Mort., Syn. Org. Rem., 67, pl. V, f. 1, 1834.

Cyprimeria depressa (Conrad).

Dosinia depressa Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 278, pl. 46, f. 6, 1860.

Dosinia haddonfieldensis Lea, Proc. Acad. Nat. Sci., 1861, 149.

Cyprimeria densata (Conrad).

Tellina densata Conr., Jour. Acad. Nat. Sci., II, 2 ser., 275, pl. 24, f. 17, 1853.

Cyprimeria hellprini Whitfield, Mon. U. S. Geol. Sur., IX, 160, pl. 22, figs. 14 and 15.

Probably only the cast of a young *C. densata*.

Cyprimeria torta Gabb, Proc. Acad. Nat. Sci., 1876, 308.

May prove to be only a form of *C. densata*.

Æora cretacea Conrad, Amer. Jour. Conch., VI, 72, pl. 3, f. 8, 1871.

Type of the genus.

Aphrodina tippiana (Conrad).

Meretrix tippiana Conr., Jour. Acad. Nat. Sci., III, 2 ser., 326, pl. 34, f. 18, 1858.

Also specimen figured by Whitfield (pl. XX, f. 7).

Dione delawarensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 302, pl. 48, f. 18, 1860.**TELLINIDÆ.****Tellina georgiana** Gabb.

Tellina (*Tellinella*) *georgiana* Gabb, Proc. Acad. Nat. Sci., 1876, 307.

Tellinimera eborea Conrad.

Tellina (*Tellinimera*) *eborea* Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 278, pl. 46, f. 14, 1860.

Also specimen figured by Whitfield (pl. 23, figs. 12, 13). The description says type from "Ala."; original label "Miss." The specimens used by Dr. Whitfield are from Haddonfield, New Jersey. In the *Am. Jour. Conch.*, VI, 73, Conrad shortens the name *Tellinimera* to *Tellimera*, *T. eborea* being the type of the genus.

Peronæoderma georgiana Gabb, Proc. Acad. Nat. Sci., 1876, 308.**Gari elliptica** Gabb, Proc. Acad. Nat. Sci., 1876.**Ænona eufaulensis** (Conrad).

Tellina eufaulensis Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 277, pl. 46, f. 15.

Specimen figured by Whitfield (pl. 23, figs. 2, 3). Type of the genus, *Ænona* Conr. (*Am. Jour. Conch.*, VI, 74).

Ænona papyria Conrad, Am. Jour. Conch., VI, 74, 1871.

Specimen figured by Whitfield (pl. 23, f. 4).

Linearia metastriata Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 279, pl. 46, f. 7, 1860.

Specimen from Haddonfield, New Jersey, figured by Whitfield (pl. 23, f. 6).

Linearia carolinensis Conrad, Kerr's Geol. Sur. N. Car., App., 9, pl. 1, f. 20, 1875.

DONACIDÆ.

Donax fordii Conrad, Amer. Jour. Conch., V, 102, pl. 9, f. 27, 1869; Whitfield, Mon. U. S. Geol. Sur., 171, pl. 23, f. 1.

Dr. Whitfield doubts whether the specimen he figures is the same as Conrad's.

SOLENIIDÆ.

Leptosolen biplicata (Conrad).

Siliquaria biplicata Conr., Jour. Acad. Nat. Sci., III, 2 ser., 324, pl. 34, f. 17, 1858.

Type of the genus *Leptosolen* Conr. (*Am. Jour. Conch.*), III, 15, 188, 1867).

Solyma lineolata Conrad, Am. Jour. Conch., VI, 75, pl. 3, f. 9, 1871.

Type of the genus.

Siliqua cretacea (Gabb).

Cultellus cretacea Gabb, Jour. Acad. Nat. Sci., 2 ser., IV, 303, pl. 48, f. 24, 1860.

Legumen planulatum (Conrad).

Solemya planulata Conr., Jour. Acad. Nat. Sci., II, 2 ser., 274, pl. 24, f. 11, 1853.

Legumen appressum Conrad, Jour. Acad. Nat. Sci., III, 325, 1858.

Specimens figured by Whitfield (pl. XXV, figs. 6-8).

Legumen ellipticum Conrad, Jour. Acad. Nat. Sci., III, 325, pl. 34, f. 19, 1858.

Also figured by Whitfield (pl. 25, f. 5); probably the same as *L. planulatum*.

MACTRIDÆ.

Cymbophora linteæ (Conrad).

Cardium (Protocardia) linteæ Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 278, pl. 46, f. 7, 1860.

Veleda linteæ Conr., Amer. Jour. Conch., VI, 74, 1870.

Specimen figured by Whitfield (pl. 23, figs. 20, 21). The type of Conrad's genus *Veleda*.

Schizodesma appressa Gabb, Proc. Acad. Nat. Sci., 1876, 306.

CORBULIDÆ.

Corbula crassiplica Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 394, pl. 68, f. 25, 1860.

Specimen figured by Whitfield (pl. 23, f. 30).

Corbula foulkei Lea, Proc. Acad. Nat. Sci., 1861, 149.

Specimens figured by Whitfield (pl. 23, figs. 27-29) are undoubtedly the same as Conrad's *C. bisulcata* from Snow Hill, North Carolina.

Corbula subcompressa Gabb, Jour. Acad. Nat. Sci., 2 ser., IV, 394, pl. 48, f. 24.

The specimen figured by Whitfield (pl. 23, fig. 26) is not the type or one figured by Gabb.

SAXICAVIDÆ.

Panopea decisa Conrad.

Panopea decisa Conr., Jour. Acad. Nat. Sci., II, 2 ser., 275, pl. 24, f. 19, 1853.

GASTROCHÆNIDÆ.

Gastrochæna americana Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 393, pl. 68, f. 20, 1860.

The specimen figured by Whitfield (pl. 25, f. 19).

PHOLADIDÆ.

Pholas pectorosa Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 299, pl. 27, f. 9.

Pholas cretacea Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 392, pl. 68, f. 18.

Casts of the excavations replaced by pyrite, with no indications of shell characters, so that it is doubtful whether it is the same as the following.

Martesia cretacea Gabb, Proc. Acad. Nat. Sci., 1876, 304.

TEREDINIDÆ.

Teredo tibialis Morton, Amer. Jour. Sci., XXIII, 292, Vol. XXIV, pl. 9, f. 2, 1833.

Teredo irregularis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 393, pl. 68, f. 19, 1860.

Teredo contorta Gabb, Proc. Acad. Nat. Sci., 1861, 323.

Bivonia cretacea Gabb, Proc. Acad. Nat. Sci., 1876, 302.

SCAPHOPODA.

Dentalium subarcuatum Conrad, Jour. Acad. Nat. Sci., II, 2 ser., 276, pl. 24, f. 13, 1853.

Also specimen figured by Whitfield (pl. XX, f. 19).

Dentalium ripleyanum Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 393, pl. 69, f. 48, 1860.

This name can only be applied to the smaller specimen; the other is *D. subarcuatum* Conrad.

Dentalium falcatum Conrad, Am. Jour. Conch., V, 44, pl. 1, figs. 12-16, 1869.

Internal casts of *Hamulus* (see under *Serpulidæ*).

Cadulus obrutus (Conrad).

Gadus obrutus Conrad, Am. Jour. Conch., V, 101, pl. 9, f. 18, 1869.

GASTEROPODA.

Actæon cretacea Gabb, Proc. Acad. Nat. Sci., 1861, p. 318.

In the drawer containing the "Gabb collection" above referred to, I found the types of this species, which were not studied by Prof. Whitfield when writing his monograph. These show, as Gabb says, a resemblance to *Tornatella bullata* Morton, but is a smaller species, "the spire higher," etc. The "two folds on the columella" are very distinct. The specimen figured by Whitfield (pl. XX, figs. 5, 6) as the type of "*Cinulia cvoidea*" Gabb, is a specimen of *A. cretacea*. Not having the

types of this species probably led Prof. Whitfield to describe the type of *A. ovoidea* Gabb, as a new species, "*Actæon subovoides*," although the original label was present. Both of Gabb's species are well described, and in the true types all the characters in the original descriptions are clearly shown. There are also in the Academy's collection the specimens figured by Whitfield on pl. 19, figs. 9-12.

Actæon ovoidea Gabb, Proc. Acad. Nat. Sci., 1861, p. 319.

Figured by Whitfield (p. 155, pl. 19, figs. 14-16) as the type of a new species, "*A. subovoides*."

Actæon gabbana Whitfield, Mon. U. S. Geol. Sur., XVIII, 156, pl. 19, figs. 23-25, 1892 = *Actæonina biplicata* Gabb, Proc. Acad. Nat. Sci., 1860, p. 93, pl. 2, f. 13 (not d'Orbigny).

Actæon forbesiana Whitfield, Mon. U. S. Geol. Sur., XVIII, 157, pl. 19, figs. 17-22, 1892.

Avellana bullata (Morton).

Tornatella? bullata Morton, Syn. Org. Rem., 48, pl. V, f. 3, 1834.

Avellana bullata Whitfield, Mon. U. S. Geol. Sur., XVIII, 163, pl. 20, figs. 1-4.

Globiconcha curta Gabb, Proc. Acad. Nat. Sci., 1861, p. 319.

Cinulia naticoides (Gabb).

Actæonina naticoides Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 299, pl. 48, f. 2, 1860.

Cinulia costata Johnson, Proc. Acad. Nat. Sci., 1898, p. 462, f. 1.

Cylichna recta (Gabb).

Bulla recta Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 302, pl. 48, f. 17, 1860.

Bulla mortoni Lyell and Forbes, Quar. Jour. Geol. Soc., London, I, 63.

Specimen figured by Whitfield (pl. 20, f. 9).

Bulla macrostoma Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 301, pl. 48, figs. 15, 16, 1860.

Bullioopsis cretacea Conrad, Jour. Acad. Nat. Sci., III, 334.

PATELLIDÆ.

Patella tentorium Morton, Syn. Org. Rem., 50, pl. 1, f. 11, 1834.

PLEUROTOMARIIDÆ.

Pleurotomaria crotaloides (Morton).

Cirrus crotaloides Morton, Syn. Org. Rem., 49, pl. 19, f. 5, 1834.

Also the specimen figured by H. A. Pilsbry (*Proc. Acad. Nat. Sci.*, 1896, p. 10, pl. I).

Pleurotrema solariformis Whitfield, Mon. U. S. Geol. Sur., XVIII, 180, pl. 22, figs. 12, 13.

It is the *Architectonica abbottii* Gabb, in part (*Proc. Acad. Nat. Sci.*, 1861, p. 321).

DELPHINULIDÆ.

Straparolus lapidosus (Morton).

Delphinula lapidosa Morton, Syn. Org. Rem., 46, pl. 19, f. 7, 1834.

Straparolus subplanus Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 299, pl. 48, figs. 4a, b, 1860.

This will probably prove to be a synonym of *S. lapidosus* Mort.

Straparolus deplanatus Gabb, ms.

The type of this species is what Gabb figured by mistake for the type of *Delphinula lapidosa* Mort. (*Jour. Acad. Nat. Sci.* IV, 2 ser., 300, pl. 48, figs. 5a, b. With the specimen there is an original label in Gabb's handwriting, "*Straparolus deplanatus* Gabb, Cretaceous, Ala." On the specimen is written the word "type." This seems to be a good species, the characters of which are well shown in the figure referred to. It is more depressed than *S. lapidosus*, the body whorl being almost uniformly rounded above and below. While practically an internal cast, the spire still has some of the shell (altered to calcite) remaining, which shows a slight crenulation below the suture. The specimen evidently came from Prairie Bluff, Alabama. I have been unable to find a description.

TROCHIDÆ.

Trochus mortoni Gabb, Proc. Acad. Nat. Sci., 1861, p. 321.

Margarita abyssina (Gabb).

Solarium abyssina Gabb, Proc. Acad. Nat. Sci., 1860, p. 94, pl. 2, f. 9.

Margaritella abbotti (Gabb).

Architectonica abbotti Gabb, Proc. Acad. Nat. Sci., 1861, p. 321.

Margaritella abbotti Whitfield, Mon. U. S. Geol. Sur., XVIII, 134, pl. 17, figs. 12-15.

Ataphrus kerri Gabb, Proc. Acad. Nat. Sci., 1876, 303, pl. 17, f. 10, 1875.

Allied to the genus *Monodonta*.

EULIMIDÆ.

Eulima cretacea Conrad, Am. Jour. Conch., V, 100, pl. 9, f. 15.

PYRAMIDELLIDÆ.

Pyramidella conellus (Whitfield).

Obeliscus conellus Whitfield, Mon. U. S. Geol. Sur., XVIII, 151, pl. 19, f. 1.

SCALARIIDÆ.

Scala annulata (Morton).

Scalaria annulata Morton, Syn. Org. Rem., 47, Pl. 3, f. 10, 1834.

Cavoscala annulata Whitfield, Mon. U. S. Geol. Sur., XVIII, 177, pl. 22, figs. 1-5.

Type of the genus *Cavoscala* Whitfield.

Scala sillimani (Morton).

Scalaria sillimani Morton, Syn. Org. Rem., 47, pl. 13, f. 9, 1834.

Scala thomasi Gabb, Proc. Acad. Nat. Sci., 1876, p. 296.

Also specimen figured by Whitfield (pl. XVIII, f. 1).

Scala cyclostoma Gabb, Proc. Acad. Nat. Sci., 1876, p. 297.

NATICIDÆ.

Natica abyssina Morton, Syn. Org. Rem., 49, pl. 13, f. 13, 1834.

Gyrodos petrosus (Morton).

Natica petrosus Morton, Syn. Org. Rem., 48, pl. 19, f. 6, 1834.

Gyrodos spillmanii Gabb, Proc. Acad. Nat. Sci., 1861, p. 320.

This is probably the same as *G. alveata* Conrad.

Gyrodos orenata (Conrad).

Natica (Gyrodos) orenata Conrad, Jour. Acad. Nat. Sci., IV, 289, 1860.

Specimens figured by Whitfield (pl. 16, figs. 5, 6), and co-types.

Gyrodos infracarinata (Gabb).

Natica infracarinata Gabb, Proc. Acad. Nat. Sci., 1861, p. 319.

Gyrodos abbottii Gabb, Proc. Acad. Nat. Sci., 1861, p. 320.

Type figured by Whitfield (pl. XV, f. 17).

Gyrodos obtusivolva Gabb, Proc. Acad. Nat. Sci., 1861, p. 320.

Gyrodos altispira (Gabb).

Lunatia altispira Gabb, Proc. Acad. Nat. Sci., 1861, p. 320.

An original label in Gabb's handwriting is marked "Dupl. types."

Lunatia halli Gabb, Jour. Acad. Nat. Sci., IV (2 ser.), 391, pl. 68, f. 11, 1860.

Also specimen figured by Whitfield (pl. 16, figs. 13, 14).

Amauropsis meekana Whitfield, Mon. U. S. Geol. Sur., XVIII, 131, pl. 16, figs. 22-25, 1892.

Amauropsis punctata (Gabb).

Phasianella punctata Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 299, pl. 48, f. 3, 1860.

Also specimens figured by Whitfield (pl. 16, figs. 19-21).

XENOPHORIDÆ.

Xenophora leprosa (Morton).

Trochus leprosus Morton, Syn. Org. Rem., 46, pl. 15, f. 6, 1834.

Also specimen figured by Whitfield (pl. 17, figs. 16, 17).

TURRITELLIDÆ.

Turritella vertebroides Morton, Syn. Org. Rem., 47, pl. 3, f. 13, 1834.

Turritella encrinoides Morton, Syn. Org. Rem., 47, pl. 3, f. 7, 1834.

Turritella granulicosta Gabb, Proc. Acad. Nat. Sci., 1861, p. 363.

Type figured by Whitfield (pl. 18, figs. 10, 11).

Turritella pumila Gabb.

Specimen figured by Whitfield (pl. 23, figs. 5, 6).

Turritella compacta Whitfield, Mon. U. S. Geol. Sur., XVIII, 142, pl. 18, figs. 8, 9.

Turritella quadrilirata Johnson, Proc. Acad. Nat. Sci., 1898, p. 463.

VERMETIDÆ.

Siliquaria pauperata Whitfield, Mon. U. S. Geol. Sur., XVIII, 149, pl. 18, figs. 26, 27, 28, 1892.

Included by Gabb under *Laxispira lumbricalis*.

Laxispira lumbricalis Gabb, Proc. Acad. Nat. Sci., 1876, p. 301, pl. 17, f. 7.

The original label (to which the specimen was gummed?) and a pencil drawing is in the Academy's collection, but the little shell is either lost or broken. The large specimen figured by Gabb (*l. c.*, pl. 17, f. 6) as *L. lumbricalis* is only part of an internal cast of *Turritella vertebroides*.

MATHILDIIDÆ.

Tuba reticulata Johnson, Proc. Acad. Nat. Sci., 1898, p. 461.

CERITHIDÆ.

Cerithium pilsbryi Whitfield, The Nautilus, VII, pp. 38 and 51, pl. II, f. 3, 1893.

"*Chemnitzia*" *occidentalis* Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 391, pl. 68, f. 10, 1860.

"*Chemnitzia*" *spillmani* Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 287, pl. 46, f. 48, 1860.

"*Chemnitzia*" *corona* Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 287, pl. 46, f. 50, 1860.

"*Chemnitzia*" *meekiana* Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 299, pl. 48, f. 1, 1860.

APORRHAIIDÆ.

Anchura arenaria (Morton).

Rostellaria arenarum Morton, Syn. Org. Rem., 48, pl. 5, f. 8, 1834.

Anchura arenaria Whitfield, Mon. U. S. Geol. Sur., XVIII, 112, pl. 14, f. 10.

Anchura pennata (Morton).

I have been unable to positively determine the type of *Rostellaria pennata* Morton (*Syn. Org. Rem.*, 48, pl. 19, f. 9). A specimen numbered (219) in Morton's handwriting (as most of his types are) agrees well with the description but not with the figure. It is a cast, and characteristic of the material from Prairie Bluff, Alabama. Three specimens (one nearly perfect) from Snow Hill, North Carolina, which Conrad has doubtfully referred to this species, on an original label, but which he has described and figured erroneously as "*Anchura rostrata* Morton" (*Kerr's Geol. N. C.*, App., 12, pl. 2, f. 28), with a reference to Gabb's description and figure of *Alaria rostrata*. It is an entirely different species from the one described by Gabb, having an expanded lip like that figured by me (*Proc. Acad. Nat. Sci.*, 1898, p. 463, f. 3), the entire lip showing one or two small projections below. Whether the form figured by Conrad or the one figured by Whitfield (pl. 14, figs. 7, 8) is the *R. pennata* of Morton I am unable to say.

Anchura abrupta Conr., var. *acutispira* Whitfield, Mon. U. S. Geol. Sur., XVIII, 114, pl. 14, f. 4

The two other specimens figured by Whitfield as *abrupta*? (pl. XIV, figs. 1-3) I should not consider the same species.

Anchura solitaria Whitfield, Mon. U. S. Geol. Sur., XVIII, 117, pl. 14, f. 9, 1892.

Anchura pergracilis Johnson, Proc. Acad. Nat. Sci., 1898, p. 463, f. 2.

Alaria rostrata (Gabb).

Rostellaria rostrata Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 390, pl. 68, f. 7, 1860.

The specimen figured by Whitfield (pl. 14, f. 6) from Haddonfield, New Jersey, has been somewhat broken.

Aporrhais? *bicarinata* Gabb, Proc. Acad. Nat. Sci., 1876, 299.

STROMBIDÆ.

Pugnellus densatus Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 284, 1860.

Specimen figured on pl. 46, f. 31, *Jour. Acad. Nat. Sci.*, IV, but not the type.

Rostellaria spirata Whitfield, Mon. U. S. Geol. Sur., XVIII, 109, pl. 13, figs. 16, 17, 1892.

Rostellaria compacta Whitfield, Mon. U. S. Geol. Sur., XVIII, 108, pl. 13, figs. 18-21, 1892.

CYPRÆIDÆ.

Cypræa mortoni Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 391, pl. 68, f. 9, 1860.

Also the New Jersey specimen figured by Whitfield (120, pl. 15, figs. 1-3).

Cypræa squyeri Campbell, The Nautilus, VII, 52, pl. 2, figs. 1, 2, 1893.

CASSIDIDÆ.

Sconsia alabamensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 301, pl. 48, f. 13, 1860.

BUCCINIDÆ.

Nassa? *globosa* Gabb, Proc. Acad. Nat. Sci., 1876, p. 282.

Both the specimens from North Carolina and from Pataula Creek, Georgia.

Euthria? *fragilis* Whitfield, Mon. U. S. Geol. Sur., XVIII, 78, pl. 9, figs. 11, 12, 1892.

Pyropsis elevata (Gabb).

Rapa elevata Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 301, pl. 48, f. 12, 1860,

This and the following species will undoubtedly prove to be the same as *P. richardsonii* Tuomey (*Proc. Acad. Nat. Sci.*, 1854, p. 169).

Pyropsis perlata (Conrad).

Tudicla (*Pyropsis*) *perlata* Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 288, pl. 46, f. 39, 1860.

Pyropsis trochiformis (Tuomey)?

Pyrula trochiformis Tuomey, Proc. Acad. Nat. Sci., 1854, p. 169.

The specimens figured by Whitfield (not of Tuomey) (pl. I, figs. 4-6).

Pyropsis oetolirata (Conrad).

Ficus oetoliratus Conr., Jour. Acad. Nat. Sci., III, 2 ser., 332, pl. 35, f. 6, 1858.

Specimen from Haddonfield, New Jersey, figured by Whitfield (pl. II, f. 10).

Pyropsis septemlirata (Gabb).

Cancellaria septemlirata Gabb, Proc. Acad. Nat. Sci., 1860, 94, p. 2, f. 10.

Also the specimen figured by Whitfield (pl. 3, figs. 7, 8).

Pyropsis retifer (Gabb).

Fusus retifer Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 301, pl. 48, f. 11, 1860.

Pyropsis naticoides Whitfield, Mon. U. S. Geol. Sur., XVIII, 43, pl. 2, figs. 5-7, 1892.**Pyropsis alabamensis** (Gabb).

Cancellaria alabamensis Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 301, pl. 48, f. 14, 1860.

Perissolax dubia (Gabb).

Purpuroidea dubia Gabb, Proc. Acad. Nat. Sci., 1860, 94, pl. 2, f. 11.

Perissolax trivolvæ (Gabb).

Fusus trivolvæ Gabb, Proc. Acad. Nat. Sci., 1860, 94.

Type figured by Whitfield (pl. 21, f. 1).

Pyrifusus pyruloidea (Gabb).

Rapa pyruloidea Gabb, Proc. Acad. Nat. Sci., 1860, 94, pl. 2, f. 4.

Pyrifusus turritus Whitfield, Mon. U. S. Geol. Sur., XVIII, 54, pl. 5, figs. 3-5, 1892.**Pyrifusus cuneus** Whitfield, Mon. U. S. Geol. Sur., XVIII, 51, pl. 4, f. 9, 1892.**Pyrifusus mullicaensis** (Gabb).

Pleurotoma mullicaensis Gabb, Proc. Acad. Nat. Sci., 1860, 95, pl. 2, f. 8.
Neptunella mullicaensis Whitfield, Mon. U. S. Geol. Sur., XVIII, 56, p. 4, figs. 20, 21, 1892.

There is no character to separate the two types except that the specimen described by Whitfield is a little larger.

Fusus holmesianus Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 389, pl. 68, f. 4, 1860.**Fusus kerri** Gabb, Proc. Acad. Nat. Sci., 1876, p. 279, pl. 17, f. 1.**Hercorhynchus tippanus** (Conrad).

Fusus tippana Conrad, Jour. Acad. Nat. Sci., IV, 2 ser., 286, pl. 46, f. 4, 1860.

Type of the genus *Hercorhynchus* Conrad (*Amer. Jour. Conch.*, IV, p. 247, 1868).

FASCIOLARIIDÆ.**Odontofusus slackii** Gabb.

Fasciolaria slackii Gabb, Proc. Acad. Nat. Sci., 1861, 322.

The type is figured by Whitfield (pl. VI, figs. 8, 9), and is the type of his genus *Odontofusus*.

Fasciolaria crassicosta Gabb, Proc. Acad. Nat. Sci., 1876, 282.**Fasciolaria obliquicostata** Gabb, Proc. Acad. Nat. Sci., 1876, 283.**Fasciolaria kerri** Gabb, Proc. Acad. Nat. Sci., 1876, 283.**Lagena? edentata** Gabb.

Tritonium (Lagena?) edentatum Gabb, Proc. Acad. Nat. Sci., 1876, p. 281.

TURBINELLIDÆ.

Turbinella parva Gabb, Proc. Acad. Nat. Sci., 1860, p. 94, pl. 2, f. 3.

Turbinella subconica Gabb, Proc. Acad. Nat. Sci., 1860, p. 94, pl. 2, f. 6.

VOLUTIDÆ.

Volutoderma delawarensis (Gabb).

Voluta delawarensis Gabb, Proc. Acad. Nat. Sci., 1861, p. 322.

Type and specimen figured by Whitfield (pl. 10, figs. 5-7).

Volutoderma bicipitata (Gabb).

Volutilithes bicipitata Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 300, pl. 48, f. 6, 1860.

Type of the genus *Volutoderma* Gabb (*Proc. Acad. Nat. Sci.*, 1876, p. 289).

Volutoderma abbottii (Gabb).

Volutilithes abbottii Gabb, Proc. Acad. Nat. Sci., 1860, 94, pl. 2, f. 7.

Also the specimen figured by Whitfield (pl. 21, figs. 8, 9).

Volutoderma intermedia Whitfield, Mon. U. S. Geol. Sur., XVIII, 184, p. 23, figs. 14, 15, 1892.

Volutoderma woolmani Whitfield, The Nautilus, VII, pp. 37, 51, pl. 2, figs. 4, 5, 1893.

Ptychosyca inornata Gabb, Proc. Acad. Nat. Sci., 1876, p. 295, pl. 17, figs. 2-4.

Volutomorpha conradi (Gabb).

Volutilithes conradi Gabb, Jour. Acad. Nat. Sci., IV, 2 ser., 300, pl. 48, f. 10, 1860.

Also specimen figured by Whitfield (pl. VII, figs. 4, 5). Type of the genus *Volutomorpha* Gabb (*Proc. Acad. Nat. Sci.*, 1876, p. 290).

Volutomorpha bella (Gabb).

Volutilithes bella Gabb, Jour. Acad. Nat. Sci., IV, 300, pl. 48, f. 7, 1860.

Described from the "Delaware and Chesapeake Canal"; original label says "N. J." Also the specimen figured by Whitfield (pl. VI, figs. 17, 18).

Volutomorpha mucronata (Gabb).

Voluta mucronata Gabb, Proc. Acad. Nat. Sci., 1861, p. 323.

Volutomorpha kanei (Gabb).

Voluta kanei Gabb, Proc. Acad. Nat. Sci., 1861, p. 323.

Volutomorpha gabbi Whitfield, Mon. U. S. Geol. Sur., XVIII, 73, pl. 8, figs. 2, 3, 1892.

Rostellites nasutus (Gabb).

Volutilithes nasuta Gabb, Jour. Acad. Nat. Sci., IV, 300, pl. 48, f. 9, 1860.

Also the specimen figured by Whitfield (pl. 11, f. 2).

Rostellites angulatus Whitfield, Mon. U. S. Geol. Sur., XVIII, 88, pl. 11, figs. 3, 4, 1892.

This may prove to be only the adult form of *R. nasutus*.

Liopeplum leioderma (Conrad).

Volutilithes (Athleta) leioderma Conrad, Jour. Acad. Nat. Sci., IV, 292, pl. 46, f. 32, 1860.

Lioderma lioderma Conrad, Proc. Acad. Nat. Sci., 1865, p. 184.

Liopeplum lioderma Dall, Trans. Wagner Free Inst. Sci., III, 73, 1890.

The type of both *Lioderma* Conrad and *Liopeplum* Dall.

Cancellaria eufaulensis Gabb, Jour. Acad. Nat. Sci., IV, 390, pl. 68, f. 8, 1860.

Cancellaria subalta Conrad, Am. Jour. Conch., V, 100, pl. 9, f. 22, 1869.

Morea naticella (Gabb).

Purpura (Morea) naticella Gabb, Jour. Acad. Nat. Sci., IV, 301, pl. 48, f. 15, 1860.

This is probably the same as *Morea cancellaria* Conrad.

Turbinopsis hilgardi Conrad, Jour. Acad. Nat. Sci., IV, 289, pl. 46, f. 29, 1860.

Turbinopsis depressa Gabb, Proc. Acad. Nat. Sci., 1861, p. 321.

This is doubtfully considered by Whitfield to be a synonym of *T. hilgardi*. The specimens figured by him (pl. 12, figs. 7-9) represents neither *T. hilgardi* Conr. nor *T. depressa* Gabb.

Turbinopsis angulata Whitfield, Mon. U. S. Geol. Sur., XVIII, 101, pl. 12, figs. 17, 18, 1892.

Type in the Academy's collection, not Rutgers College, as stated by Whitfield.

Turbinopsis curta Whitfield, Mon. U. S. Geol. Sur., XVIII, 102, pl. 12, figs. 5, 6, 1892.

Turbinopsis elevata Whitfield, Mon. U. S. Geol. Sur., XVIII, 102, pl. 12, figs. 10-14, 1892.

Four specimens are referred to this species, three of which are figured. I can find no character to separate three of these from *T. curta*. The type should, therefore, be restricted to the specimen represented by figs. 13 and 14.

Turbinopsis plicata Whitfield, Mon. U. S. Geol. Sur., XVIII, 104, pl. 12, figs. 1, 2, 1892.

Turbinopsis lapidosa (Whitfield).

Modulus lapidosa Whitfield, Mon. U. S. Geol. Sur., XVIII, 152, pl. 17, figs. 6-8, 1892.

This species is identical or close to *Turbinopsis depressa* Gabb.

Gyrotropis squamosus Gabb, Proc. Acad. Nat. Sci., 1876, 300, pl. 17, f. 5.

Probably a *Turbinopsis*.

Cithara crosswickensis Whitfield, Mon. U. S. Geol. Sur., XVIII, 107, pl. 13, figs. 7, 8, 1892.

Drillia georgiana Gabb, Proc. Acad. Nat. Sci., 1876, p. 280.

CEPHALOPODA.

Baculites ovatus Say, Am. Jour. Sci., II, 41, 1820; Morton, Jour. Acad. Nat. Sci., VI, 89, pl. 5, f. 6, 1828.

The specimen described by Say and figured by Morton.

Baculites compressus Say, Am. Jour. Sci., II, 41, 1820; Morton, Am. Jour. Sci., XXIII, 291, pl. 9, f. 1, 1833.

The specimen figured by Morton.

Baculites asper Morton, Am. Jour. Sci., XXIII, 291, 1830; Syn. Org. Rem., 43, pl. 1, figs. 12, 13, pl. 13, f. 2, 1834.

Baculites carinatus Morton, Syn. Org. Rem., 44, pl. 13, f. 1, 1834.

Baculites labyrinthicus Morton, Syn. Org. Rem., 44, pl. 13, f. 10, 1834.

Baculites columna Morton, Syn. Org. Rem., 44, pl. 19, f. 8, 1834.

The specimen, although marked type, does not agree with the figure. Morton's original label, which accompanied all the others, was wanting in this case.

Solenoceras annulifer (Morton).

Hamites annulifer Morton, Jour. Acad. Nat. Sci., VIII, 213, pl. 11, f. 4.

Solenoceras annulifer Conr., Jour. Acad. Nat. Sci., IV, 2 ser., 284.

The type of Conrad's genus *Solonoceras*. Whitfield refers it to the genus *Ptychoceras*, and also figures the type.

Hamites arculus Morton, Syn. Org. Rem., 44, pl. 15, figs. 1, 2, 1834.

Hamites torquatus Morton, Syn. Org. Rem., 45, pl. 15, f. 4, 1834.

Hamites trabeatus Morton, Syn. Org. Rem., 45, pl. 15, f. 4, 1834.

Heteroceras conradi (Morton).

Ammonceratites conradi Morton, Jour. Acad. Nat. Sci., VIII, 212, pl. 10, f. 1, 1841.

Heteroceras conradi Whitfield, Mon. U. S. Geol. Sur., XVIII, 269, pl. 45, figs. 9, 10, 11, and 14.

Scaphites hippocrepis (DeKay).

Scaphites cuvieri Morton, Jour. Acad. Nat. Sci., VI, 109, pl. 7, f. 1, 1828.

Morton's type.

Scaphites reniformis Morton, Syn. Org. Rem., 42, pl. 2, f. 6, 1843.

The type reported missing by Dr. Whitfield was found in working over the material.

Scaphites iris Conrad, Jour. Acad. Nat. Sci., III, 2 ser., 335, pl. 35, f. 23.

Scaphites similis Whitfield, Mon. U. S. Geol. Sur., XVIII, pl. 44, figs. 1, 2, 1892.

Scaphites conradi (Morton).

Ammonites conradi Morton, Syn. Org. Rem., 39, pl. 16, f. 3, 1834.

Ammonites conradi Morton, var. *A. gulosus*, l. c., pl. 16, f. 2.

Ammonites conradi Morton, var. *B. petechialis*, l. c., 40, pl. 16, f. 1.

Ammonites conradi Morton, var. *C. navicularis*, l. c., 40, pl. 19, f. 4.

Types of the species and all the varieties.

Ammonites delawarensis Morton, Am. Jour. Sci., XVIII, 244, pl. 2, f. 4, 1830.

Specimens figured by Whitfield (pl. 42, figs. 6, 7, 8, and pl. 43, figs. 1, 2).

Ammonites vanuxemi Morton, Am. Jour. Sci., XVIII, 244, pl. 3, figs. 3, 4, 1830.

Ammonites dentatocarinatus Roemer.

Specimen figured by Whitfield (pl. 41, figs. 3, 4).

Placentioceras spillmani Hyatt, Mon. U. S. Geol. Sur., XLIV, 233, pl. 47, figs. 6-8, 1903.

Placentioceras placenta (DeKay).

Specimen figured by Whitfield (pl. 40). Also specimens figured by Hyatt (*Mon. U. S. Geol. Sur.*, XLIV, pl. 39, figs. 3-6).

Placenticerias telifer (Morton).

Ammonites telifer Morton, Am. Jour. Sci., XXIII, p. 290, 1833; Syn. Org. Rem., 38, pl. 2, f. 7.

Placenticerias syrtale (Morton).

Ammonites syrtalis Morton, Syn. Org. Rem., pl. 16, figs. 1, 2.
Placenticerias syrtalis Hyatt, Mon. U. S. Geol. Sur., XLIV, 205, pl. 28, figs. 1, 2, and pl. 27, f. 15.

Protengonoceras gabbi (Böhm).

Ammonites pederalis Gabb, Pal. Calf. II, 258, pl. 35, figs. 1, 1a, 1869 (not v. Buch).
Engonoceras gabbi Böhm, Zeitschr. Deutsch. geol. Gesell., L, p. 197, 1898.
Protengonoceras gabbi Hyatt, Mon. U. S. Geol. Sur., XLIV, 153, pl. 17, f. 20.

The specimen figured by Hyatt, Pl. 17, f. 20.

Sphenodiscus lenticularis var. **mississippiensis** Hyatt, Mon. U. S. Geol. Sur., XLIV, 77, pl. 9, f. 9, 1903.**Eutrophoceras dekayi** (Morton).

Nautilus dekayi Morton, Am. Jour. Sci., XXIII, 291, pl. 8, f. 4, 1833.

Specimen figured by Whitfield (pl. 37, f. 4). Type of Hyatt's genus *Eutrophoceras* (*Proc. Am. Phil. Soc.*, XXXII, 555).

Nautilus perlatus Morton, Syn. Org. Rem., 33, pl. 13, f. 4, 1834.

This may prove to be a synonym of *E. dekayi*.

Nautilus bryani Gabb, Proc. Acad. Nat. Sci., 1876, p. 277.**Hercoglossa paucifex** (Cope).

Aturia paucifex Cope, Proc. Acad. Nat. Sci., 1866, p. 34.

Type figured by Whitfield (pl. 39, f. 1).

Belemnitella americana (Morton).

Belemnites americanus Morton, Am. Jour. Sci., XVII, 281, 1830; XVIII, pl. 1, figs. 1-3, 1830; Jour. Acad. Nat. Sci., VI, 190, pl. 8, figs. 1-3, 1830.

Variety A, Morton (*Syn. Org. Rem.*, 34, pl. 1, fig. 3), is the type of the var. *subfusiformis* Whitfield (pl. 47, figs. 1, 2). There is also the type of var. "B," Morton (*Syn. Org. Rem.*, 34, pl. 1, f. 3b).

Belemnites (?) **ambiguus** Morton, Am. Jour. Sci., XVII, 281, 1830; XVIII, pl. 1, figs. 4, 5, 1830; Jour. Acad. Nat. Sci., VI, 192, pl. 8, figs. 4, 5, 1830.

CRUSTACEA.

Callianassa mortoni Pilsbry, Proc. Acad. Nat. Sci., 1901, 112, pl. 1, figs. 1-6.**Hoploparia gabbi** Pilsbry, Proc. Acad. Nat. Sci., 1901, 115, pl. 1, figs. 11-14.**Cancer whitfieldi** Pilsbry, Proc. Acad. Nat. Sci., 1901, 118, pl. 1, f. 18.**Scalpellum conradi** Gabb, Proc. Acad. Nat. Sci., 1876, 179, pl. V, figs. 3a, b, 4.